

REMARKS

In the Non-Final Office Action of December 28, 2004, claims 1-29 are pending. Claims 1-5 and 8-10 are independent claims from which all other claims depend therefrom. Claims 1-5, 8-9, 19-21, and 26 are herein amended. Note that the Office Action does not provide any arguments for the rejection of claims 8-10, 11-12, and 27.

Claims 1-3, 5-6, 13-17, 21-22, and 28-29 stand rejected under 35 U.S.C. 102(b) as being anticipated by Rogers et al. (U.S. 6,301,332).

Amended claim 1 recites the limitations of an electron collector body that has a significantly large surface area that is disposed over and is approximately parallel with a target surface area and is configured and oriented to receive a significant amount of back-scattered electrons. Although Rogers discloses an electron collector body 120 that has a coating layer 124, which is configured and oriented to receive a significant amount of back-scattered electrons, the coating layer 124 is not approximately parallel with a target surface.

Amended claim 2 recites the limitations of a first electron collector body and a second electron collector body thermally coupled to an x-ray tube window. The first electron collector body and the second electron collector body are non-integrally formed with each other. Although Rogers discloses an electron collector body 120 that surrounds an x-ray tube window, the electron collector body 120 is a single integral body or unit, as opposed to two separate collector bodies as claimed.

Amended claim 3 recites the limitations of an electron collector body that is thermally coupled to an x-ray tube window. The electron collector body includes a coolant circuit with a coolant inlet and a coolant outlet and a thermal exchange device. The thermal exchange device is coupled to the coolant circuit. The thermal exchange device is contained within the electron collector body and a portion thereof is curved. Applicants agree that the coating layer 124 of Rogers, referred to in the Office Action, is curved, however it is not contained

within the electron collector body 120. The coating layer 124 is external to the electron collector body.

Amended claim 5 recites the limitations of an electron collector body that is thermally coupled to an x-ray tube window. The electron collector body includes a cavity and a thermal exchange device. The thermal exchange device is formed at least partially of a phase change material and substantially fills the cavity. The electron collector body 120 of Rogers does not have a cavity that is substantially filled with a phase change material.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegrad Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since Rogers fails to teach or suggest each and every element of claims 1-3 and 5, they are novel, nonobvious, and are in a condition for allowance. Applicants further submit that each and every element of claims 8-10 are not taught or suggested by Rogers. Therefore, since claims 6, 13-17, 21-22, and 27-29 depend from the now allowable claims 1-3, 5, and 8-10, claims 6, 13-17, 21-22, and 27-29 are also novel, nonobvious, and allowable for at least the same reasons.

Claims 4, 7, 19-20, 26, and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Roger in view of Kang et al. (U.S. 6,142,222).

Amended claim 4 now recites the limitations of an electron collector body that includes a thermal exchange device. The thermal exchange device is a finless porous body.

The Office Action states that Rogers fails to disclose a porous body. Applicants agree. However, the Office Action states that Kang discloses metal porous fins. Applicants submit that the claimed limitations of claim 4 no longer include porous fins and that Kang does not disclose or suggest any other porous device.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art reference(s) must teach or suggest all the claim limitations, see *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Thus,

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Applicants submit that Rogers and Kang fail to teach or suggest each and every limitation of claim 4, therefore claim 4 is novel, nonobvious, and is in a condition for allowance. Also, since claims 7, 19-20, 26, and 28 depend from allowable claims 1-5 and 8-10, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Also, since claims 13-18, 22, 25, and 27 depend from claim 4, they are also allowable for the reasons put forth above with respect to claim 4.

Claims 23-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Lu et al. (U.S. 6,430,263).

Applicants submit that since claims 23-24 depend upon claims 1-5 and 8-10, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons as put forth above with respect thereto. In addition, Lu also fails to teach or suggest the above stated limitations lacking in Rogers.

Claim 25 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Rogers in view of Marechal et al. (U.S. 6,390,187).

Applicants submit that since claims 25 depends upon claims 1-5 and 8-10, it is also novel, nonobvious, and is in a condition for allowance for at least the same reasons as put forth above with respect thereto. In addition, Marechal also fails to teach or suggest the above stated limitations lacking in Rogers.

Moreover, Applicants submit that Marechal is nonanalogous art. Referring to MPEP 2141.01(a), while the Patent Office classification of references and cross-references in the official search notes are some evidence of "nonanalogous" or "analogy" respectively, the court has found "the similarities and differences in structure and function of the inventions to carry far greater weight." *In re Ellis*, 476 F.2d 1370, 1372, 177USPQ526, 527 (CCPA 1973). Marechal would not have logically commended itself to an inventor's attention in considering the problems solved by the assembly of claim 25. In developing an x-ray tube cooling assembly, one would clearly not look to a heat exchanger for an automotive vehicle. Marechal is directed to the efficiency of an automotive vehicle heat exchanger. Although Marechal discloses a heat

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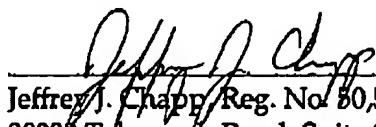
exchanger having flexible tubes that are 1-4mm in diameter, Marechal does not provide or describe an x-ray system or assembly, nor does Marechal describe or disclose components or devices that may be used within an x-ray system or assembly. The heat exchanger tubes of Marechal are not applicable to an x-ray tube window cooling assembly. The heat exchanger of Marechal would not have logically commended itself to the Applicant's attention in solving the problems associated with an x-ray tube assembly. Marechal would not be reasonably pertinent to the particular problems solved by the assembly of claim 25. Thus, the Applicants submit that Marechal is nonanalogous art.

Claim 18 stands rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 of co-pending Application No. 10/683306 in view of Rogers. Applicants have herewith submitted a terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome this rejection.

In light of the amendments and remarks, Applicants submit that all the rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,

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